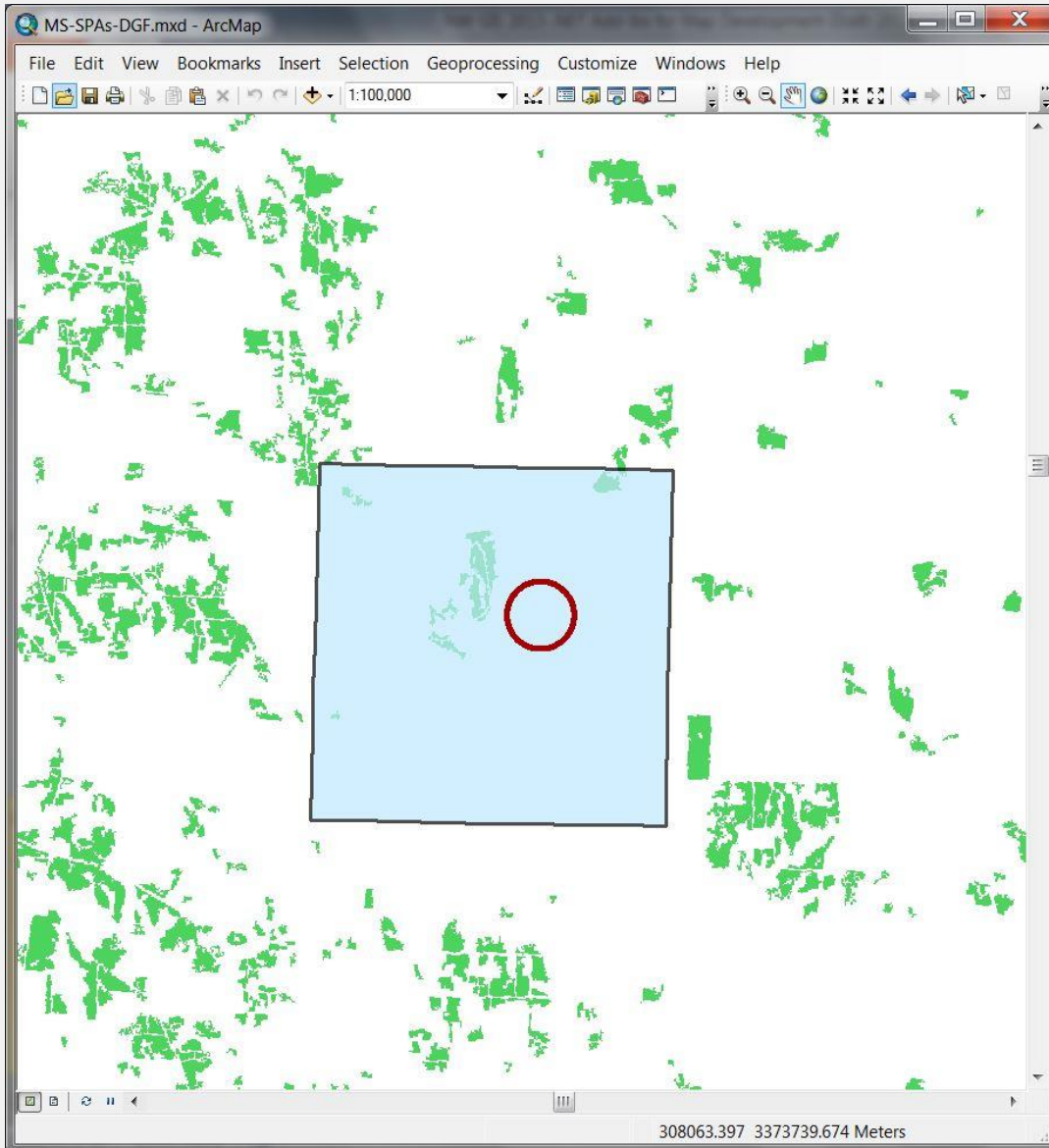


Species Protection Area Development with .NET

David Howes, Ph.D.

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Species Protection Area Tools – Primary Area



SPA Tools

SPA Development

#	Unit ID	SPAs Created	Primary SPA Found	QC Status
1	1	1	1	0
2	2	1	1	0
3	3	1	1	0
4	4	1	1	0
5	5	1	1	0
6	6	1	1	0
7	8	0	0	0
8	9	0	0	0
9	10	0	0	0
10	11	1	1	0
11	13	1	1	0

State: MS

Units: < > Load Filter: None Use Selection

Current: 1 Count: 13 w/SPAs: 9 Zoom To UTM Info

SPAs: Create Set Attributes Identify Primary Apply to all

Reset Data Checks Create Buffered Unit

QC Status: 0 Assign Create ZS Tables Create NLCD tables

Start Point: Get Use point

Sel. pt at X: 8 Y: 8 Use Outside %:

Shift Limit X: Y: Use Allowable spill %: 0.001

Sel. pt adj. factor X: 1.00 Y: 1.00 Use

Sel. pts rotation angle: 0 Use

Sections Buffer Distance: Create Secs.

Get Position: SW Set Corner

Reset Create Q. Secs Create SPA-Sec. Sel

#	ID	Manual Primary	Auto Primary	Unit Count	C81 Area	C82 Area	C81 + C82 Area	Rejected	Rejection Reasons
5	5	0	0	2	1095300	67500	1162800	False	
6	6	1	1	2	827100	67500	894600	False	
7	101	-1	-1	2	-1	-1	-1	True	Unit buffer spill; Unit buffer spill - Y
8	102	-1	-1	2	-1	-1	-1	True	Unit buffer spill; Unit buffer spill - X
9	103	-1	-1	2	-1	-1	-1	True	Unit buffer spill; Unit buffer spill - X

Messages

Clear Messages

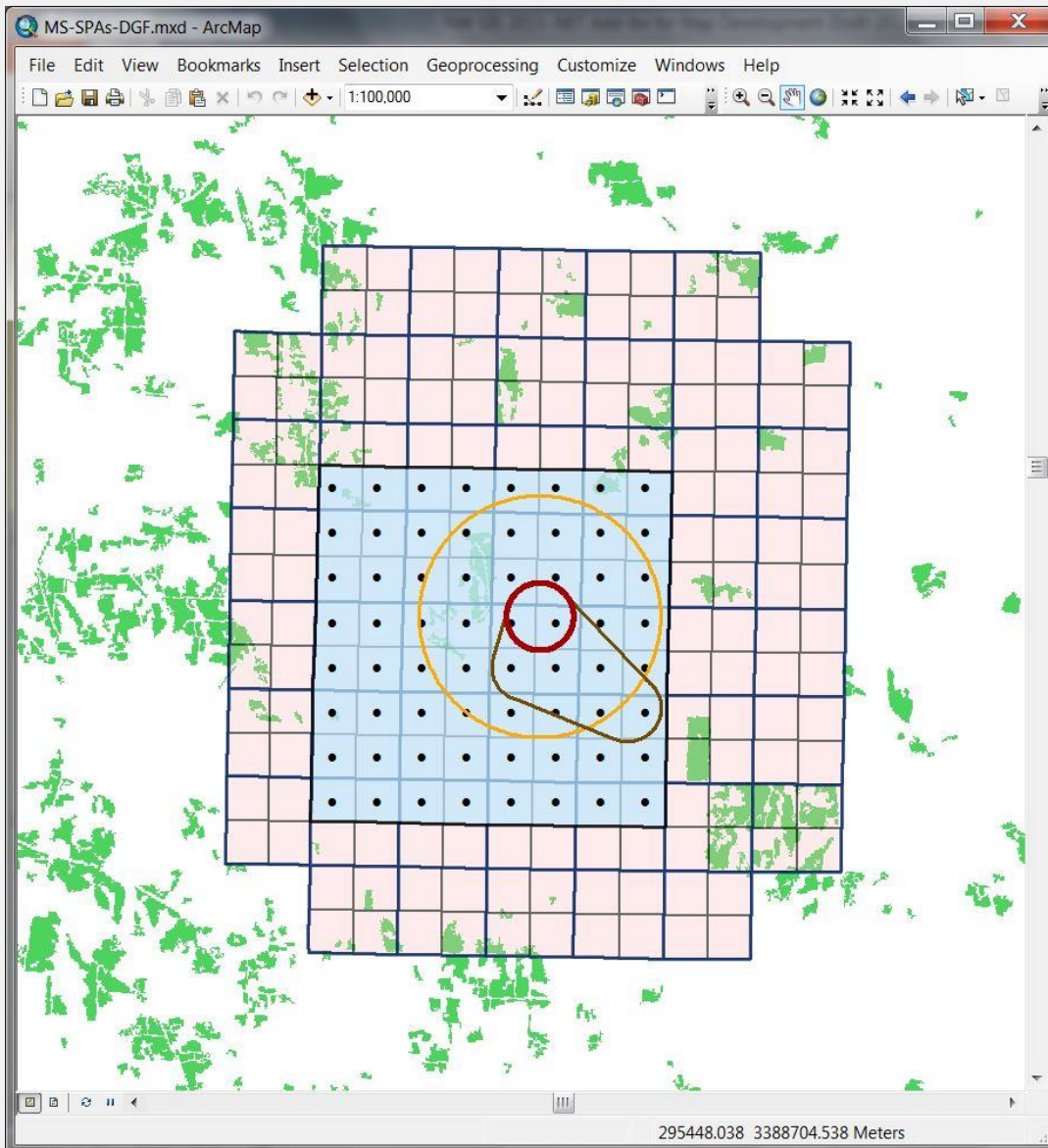
Reset Form

Goal: define protection areas for species habitat locations according to rules that vary from state to state

Example:

- US FWS Critical Habitat (CH) locations
- Polygon based on aggregation of selected quarter sections
- Positioning rules:
 - Maximize number of overlapping CH locations
 - Minimize area of agricultural land cover

Species Protection Area Tools – Area Construction



SPA Tools

State: MS Create Core Files

Units: < > Load Filter: None Use Selection

Current: 1 Count: 13 w/SPAs: 9 Zoom To UTM Info

SPAs: Create Set Attributes Identify Primary Apply to all

Reset Data Checks Create Buffered Unit

QC Status: 0 Assign Create ZS Tables Create NLCD tables

Start Point: Get Use point

Sel. pt at X: 8 Y: 8 Use Outside %:

Shift Limit X: Y: Use Allowable spill %: 0.001

Sel. pts rotation angle: 0 Use

Sections Buffer Distance: Create Secs.

Get Position: SW Set Corner

Reset Create Q. Secs Create SPA-Sec. Sel

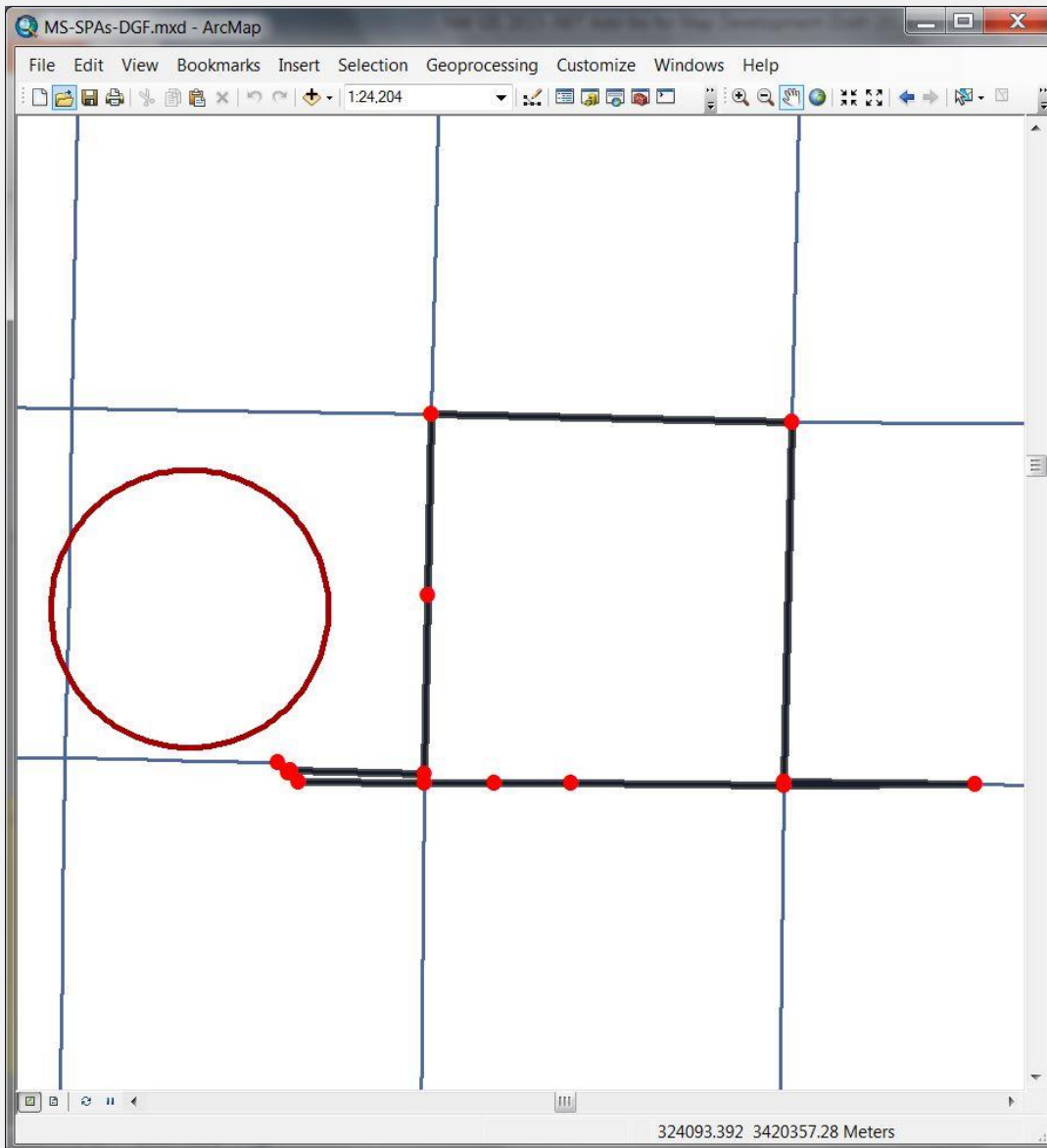
#	ID	Manual Primary	Auto Primary	Unit Count	C81 Area	C82 Area	C81 + C82 Area	Rejected	Rejection Reasons
5	5	0	0	2	1095300	67500	1162800	False	
6	6	1	1	2	827100	67500	894600	False	
7	101	-1	-1	2	-1	-1	-1	True	Unit buffer spill; Unit buffer spill - Y
8	102	-1	-1	2	-1	-1	-1	True	Unit buffer spill; Unit buffer spill - X
9	103	-1	-1	2	-1	-1	-1	True	Unit buffer spill; Unit buffer spill - X

Messages Clear Messages Reset Form

Key datasets:

- Public Land Survey Sections
- Derived quarter sections
- Critical Habitat locations
- Buffered Critical Habitat locations
- Selection points
- 2006 National Land Cover Data (NLCD)

Species Protection Area Tools – Challenges



A screenshot of the SPA Tools dialog box. The 'SPA Development' section contains a table with columns: #, Unit ID, SPAs Created, Primary SPA Found, and QC Status. The 'Messages' section is empty.

#	Unit ID	SPAs Created	Primary SPA Found	QC Status
4	4	1	1	0
5	5	1	1	0
6	6	1	1	0
7	8	0	0	0
8	9	0	0	0
9	10	0	0	0
10	11	1	1	0
11	13	1	1	0
12	14	0	0	0
13	15	1	1	0

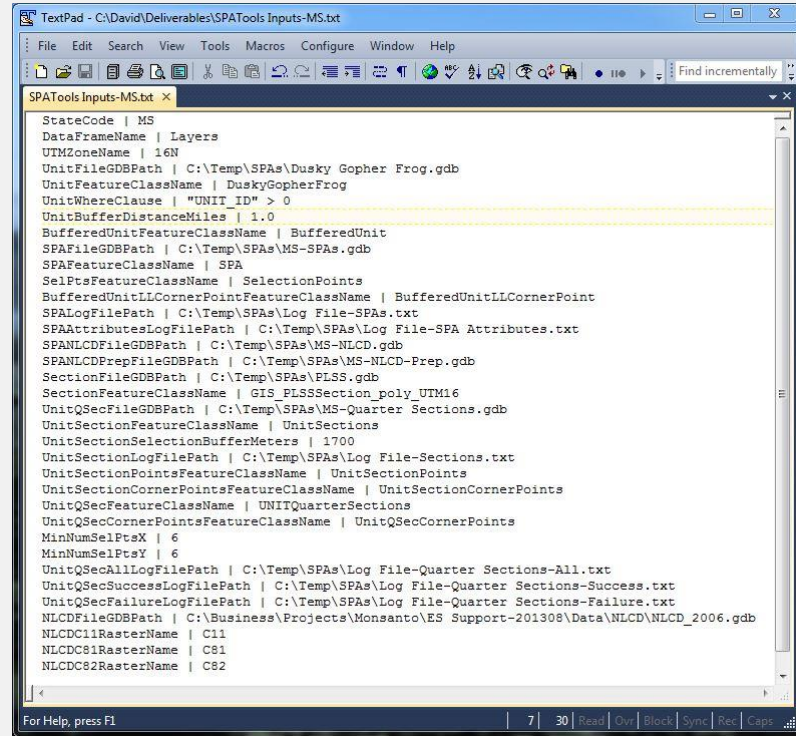
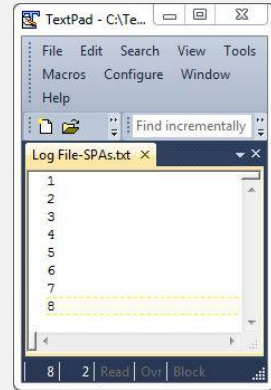
Messages

- Quarter section creation problem due to inability to automatically find corners
- Manually define corners and pass to procedure

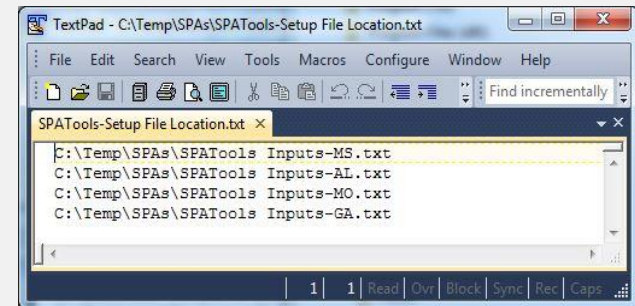
Species Protection Area Tools – Operation

Setup file

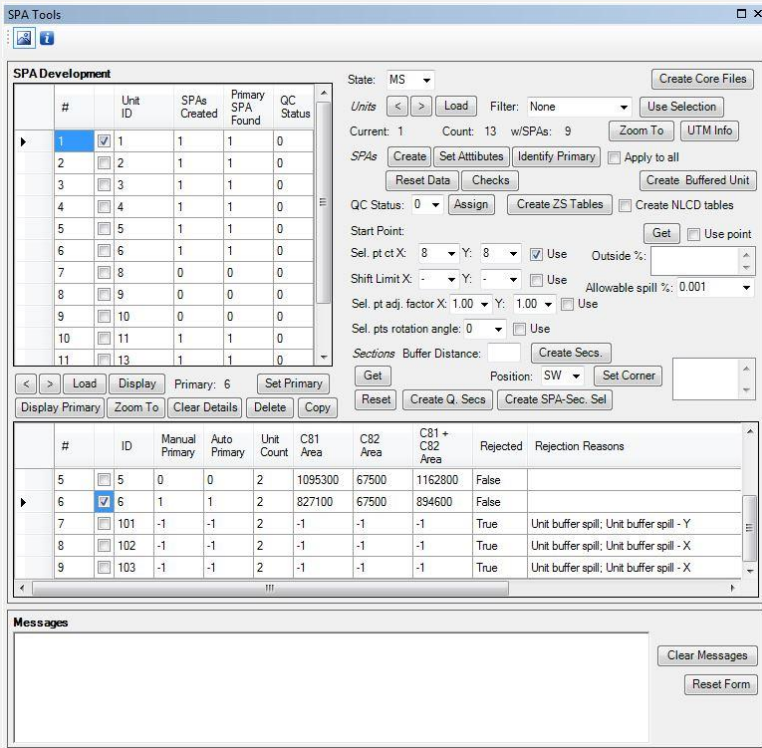
Log file



Tools



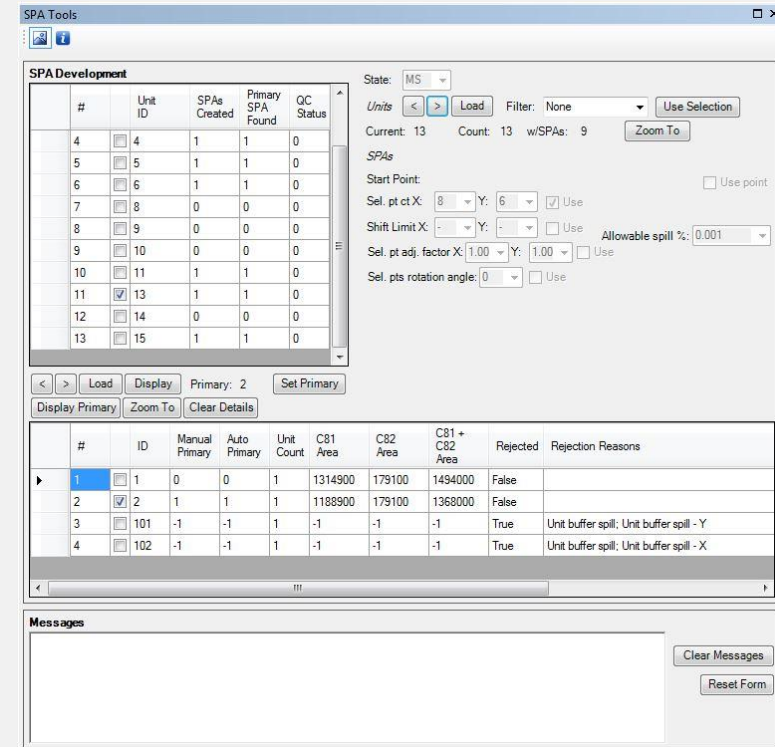
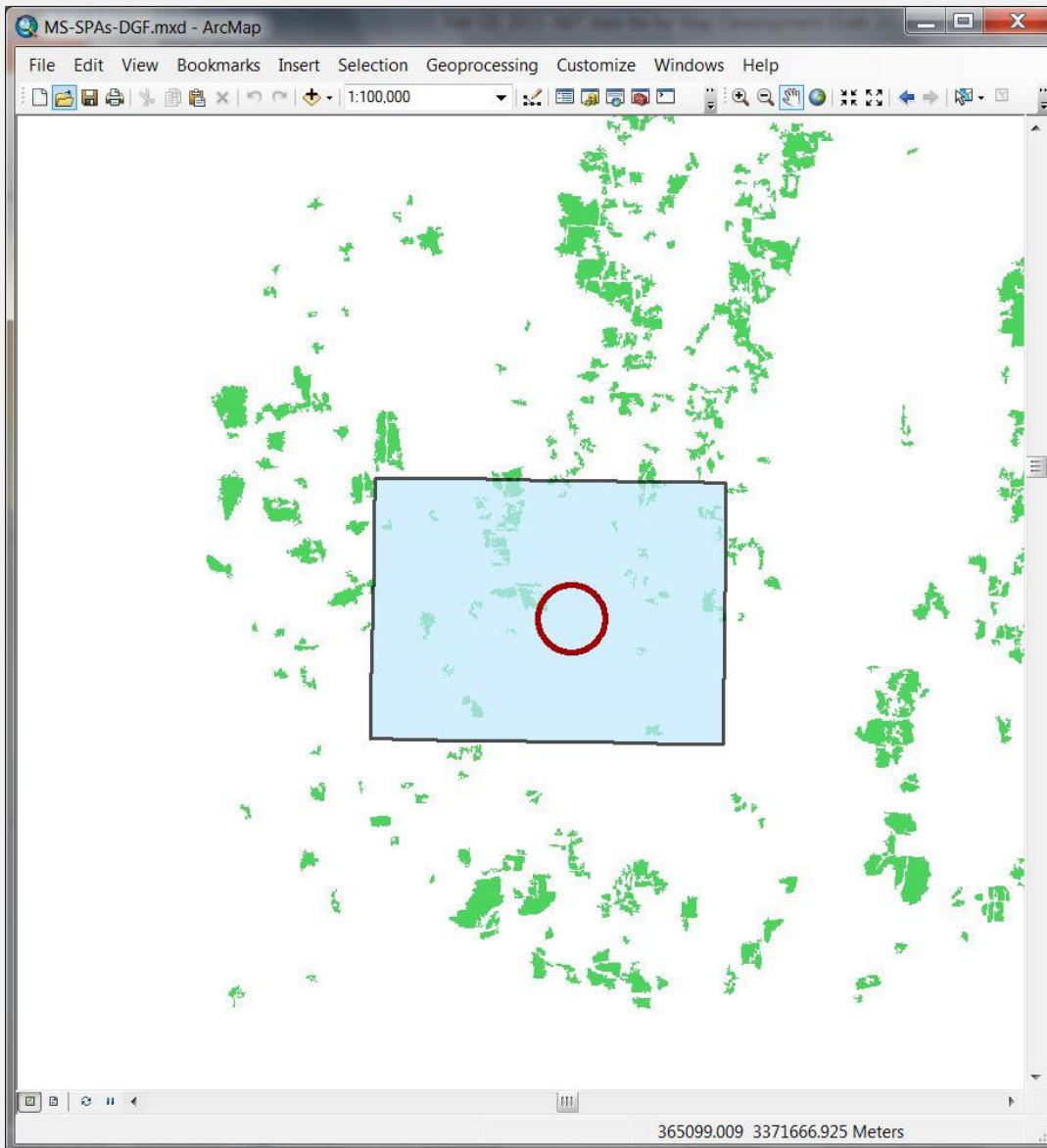
Setup file location file



Deliverables

Name	Date modified	Type	Size
Code	10/13/2013 2:17 PM	File folder	
MS-Quarter Sections.gdb	10/13/2013 2:25 PM	File folder	
MS-SPAs.gdb	10/13/2013 2:25 PM	File folder	
MS-SPAs-DGF.mxd	10/13/2013 1:18 PM	ArcGIS ArcMap Document	2,439 KB
SPAs-MS-DGF-20131013-1420.zip	10/13/2013 2:20 PM	Compressed (zipped) Folder	1,078 KB
SPATools Inputs-MS.txt	10/13/2013 2:11 PM	TXT File	2 KB
SPATools-20131013-1415.esriaddin	10/13/2013 1:18 PM	Esri AddIn File	265 KB

Species Protection Area Tools – Deliverable



- Read-only version of tools (functionality hidden as required)
- Tools appearance is a low priority
- Main priority is output data